

## **REMARKS**

Reconsideration of the above referenced application in view of the following remarks is requested. Existing claims 1-29 remain in the application.

## **ARGUMENT**

### ***Claim Rejections – 35 USC § 102***

Claims 1, 2, 4, 5, 8, 12-14, 16, 18, 20-22, 24, 25, and 27 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 6,070,137 to Bloebaum, et al. (hereinafter Bloebaum).

Regarding independent claim 1, the Examiner asserted that col. 4, lines 23-49 of Bloebaum discloses the limitation of "estimating the noise power spectrum for each frame of an audio signal based on a plurality of signal power spectrum values computed from a corresponding plurality of adjacent frames," recited in claim 1. Applicants respectfully disagree. The cited portion of Bloebaum provides,

Audio is input to the system through a microphone or the like to a sampler 26 that converts analog audio signals into frames of time-domain audio samples. A voice activity detector (VAD) 28 receives the audio samples and determines the presence or absence of speech in the current frame, representing this decision by the status of a flag called "vadFlag". A filterbank analyzer 38 receives the current frame of audio samples and computes a set of voiced/unvoiced decisions represented by a vector  $V$ , and an estimate of the fundamental frequency, represented by scalar  $\omega_0$ . *A transformer function 32 also receives the **current frame** of audio samples. The transformer 32 computes an estimate of the power spectrum of these samples.* A noise model adapter function 34 updates a noise model vector  $N$  using the *estimated power spectrum of the current frame*, if the vadFlag indicates that there is an absence of speech. The noise model adapter 34 computes a spectral enhancement filter from the updated noise model vector  $N$  and *the estimated power spectrum of the current frame*. A spectral estimator function 36 applies the spectral enhancement filter to *the current frame's estimated power spectrum* in order to remove or reduce the background noise. Furthermore, the block

36 develops a set of spectral magnitudes, represented by a vector  $M$ , from the filtered power spectrum estimate. The quantizer and encoder function 24 transforms the voiced/unvoiced decisions, the fundamental frequency, and the spectral magnitudes into a frame of encoded bits (emphases added).

Clearly the cited portion of Bloebaum does not disclose the limitation—estimating the noise power spectrum for each frame of an audio signal based on a plurality of signal power spectrum values computed from a corresponding plurality of adjacent frames. As highlighted by Applicants in the cited portion of Bloebaum quoted above, Bloebaum only uses on samples of the current frame to estimate/compute the power spectrum of the current frame. It does not use power spectrum values computed from a corresponding plurality of adjacent frames. Nowhere does the cited portion or other portions of deVries disclose, explicitly or implicitly, that signal power spectrum values computed from its adjacent frames are used to compute the noise power spectrum for a frame.

Additionally, the Examiner asserted that col. 6, lines 7-28 of Bloebaum discloses the limitation of “computing dynamically an over-subtraction factor for each frame of the audio signal based on the estimated noise power spectrum of the frame,” as recited in claim 1. Applicants respectfully disagree. Although the cited portion of Bloebaum very briefly and generally mentions a subtraction factor  $\delta$ , but it does not disclose that subtraction factor is computed dynamically for each frame. Because Bloebaum does not disclose the dynamic nature of the subtraction factor. Thus, deVries does not disclose this limitation of claim 1.

For the foregoing reasons, Bloebaum does not teach each and every element of claim 1. Thus, claim 1 is not anticipated by Bloebaum. Accordingly, all of the claims

that depend therefrom, particularly claims 2, 4, and 5, are not anticipated by deVries either.

Claims 8, 12-14, 16, 18, 20-22, 24, 25 and 27 are rejected for the same reasons set forth in the rejections of claims 1, 2, 4, and 5. For the same reasons presented above in traversing the rejections of claims 1, 2, 4, and 5, these claims are not anticipated by Bloebaum. Therefore, Applicants respectfully request that the 35 U.S.C. § 102 rejections of claims 1, 2, 4, 5, 8, 12-14, 16, 18, 20-22, 24, 25 and 27 based on Bloebaum be withdrawn.

***Claim Rejections – 35 USC § 103***

Claims 7, 9, 11, 17, 19 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bloebaum as applied to claims 1, 8, 13, 18 and 27 above, and further in view of deVries (US 6,289,309) (hereinafter deVries).

As presented above in traversing the 35 U.S.C. 102 rejections of independent claims 1, 8, 13, 18, and 27, Bloebaum does not teach or suggestion each and every limitation recited in those independent claims. DeVries was not cited to cure those deficiencies of Bloebaum. Thus, the combination of Bloebaum and deVries does not teach or suggest all the limitations recited in claims 7; 9, 11; 17; 19; and 28, which depend from claim 1; 8; 13; 18; and 17, respectively. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103 rejections of claims 7, 9, 11, 17, 19, and 28 over Bloebaum in view of deVries be withdrawn.

## CONCLUSION

In view of the foregoing, it is believed that existing active claims in the present application are all in condition for allowance. If the Examiner has any questions, the Examiner is invited to contact the undersigned at (503) 264-1700. Early issuance of a Notice of Allowance is respectfully requested.

Respectfully submitted,

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/Guojun Zhou/  
Guojun Zhou  
Registration No. 56,478  
Patent Attorney  
Intel Corp.  
2111 NE 25<sup>th</sup> Avenue, M/S: JF3-147  
Portland, OR 97124  
Tel: (503)264-1700  
Email: Guojun.Zhou@Intel.com